

CLAIM AMENDMENTS

1-31. (canceled)

32. (currently amended): A method of detecting ~~[[the]]~~ post-transcriptional gene silencing (PTGS) of a target gene in an organism which method comprises the steps of:

(i) ~~obtaining a sample of material from said organism,~~
(ii) ~~producing a nucleic acid extract from said sample,~~
(ii) ~~analyzing [[said]] a nucleic acid extract such as prepared from said organism~~ to determine the presence or absence of short RNA molecules (SRMs) ~~which are 21-25- are 20-30~~ nucleotides in length ~~(SRMs)~~ in said extract,

~~[[iv)]]~~ characterizing any SRMs which are present in said extract ~~such as~~ to determine sequence identity or similarity with ~~[[said]]~~ any target gene, ~~and~~

~~(v) correlating the presence of said SRMs having sequence identity or similarity with said target gene in the extract with the occurrence of gene silencing in said organism~~
wherein the presence of any SRMs having sequence identity or similarity with said target gene indicates silencing of the target gene in the organism.

33. (withdrawn; currently amended): ~~A method in accordance with~~ The method of claim 32, wherein the organism is a plant.

34. (withdrawn; currently amended): ~~A method in accordance with~~ The method of claim 32, wherein the organism is a nematode.

35. (currently amended): ~~A method in accordance with~~ The method of claim 32, wherein the organism is a mammal.

36. (currently amended): ~~A method in accordance with~~ The method of claim 32 wherein the SRMs are short anti-sense RNA molecules (SARMs).

37. (currently amended): ~~A method in accordance with~~ The method of claim 32 wherein the SRMs are short sense RNA molecules (SSRMs).

38. (canceled)

39. (currently amended): ~~A method in accordance with~~ The method of claim 32, wherein the silencing of said target gene in the organism is associated with pathogen derived resistance.

40. (currently amended): ~~A method in accordance with~~ The method of claim 32, wherein the silencing of said target gene in the organism is associated with modification of a specific trait by co-suppression of the target gene.

41. (currently amended): ~~[[A]] The method of identifying a silenced target gene in an organism in which gene silencing is detected as claimed in claim 32, which method further comprises the steps of~~ wherein the step of characterizing any SRMs present in the extract to determine sequence identity or similarity with a target gene is performed by:

[[vi]] preparing a library of genes from said organism, and

[[vii]] identifying those genes in said library which share sequence identity or similarity, with any SRMs which are present in the extract as being genes which are silenced in the organism.

42-46. (canceled)

47. (currently amended): ~~A method according to~~ The method of claim 32 wherein the target gene is an animal gene selected from the group consisting of ~~[[:]]~~ a gene involved in apoptosis; a gene involved in cell-cycle regulation; and a gene involved in a neurological process.

48. (canceled)

49. (currently amended): ~~A method as claimed in~~ The method of claim 32, wherein said short RNA molecules are 25 nucleotides in length.

50-65. (canceled)